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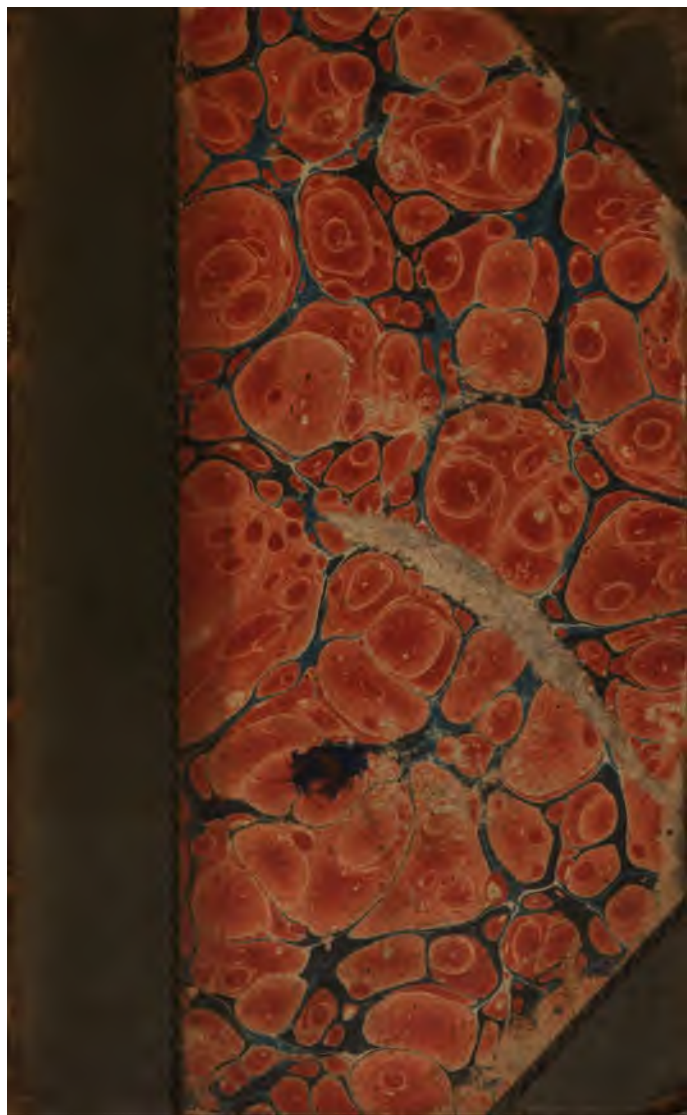
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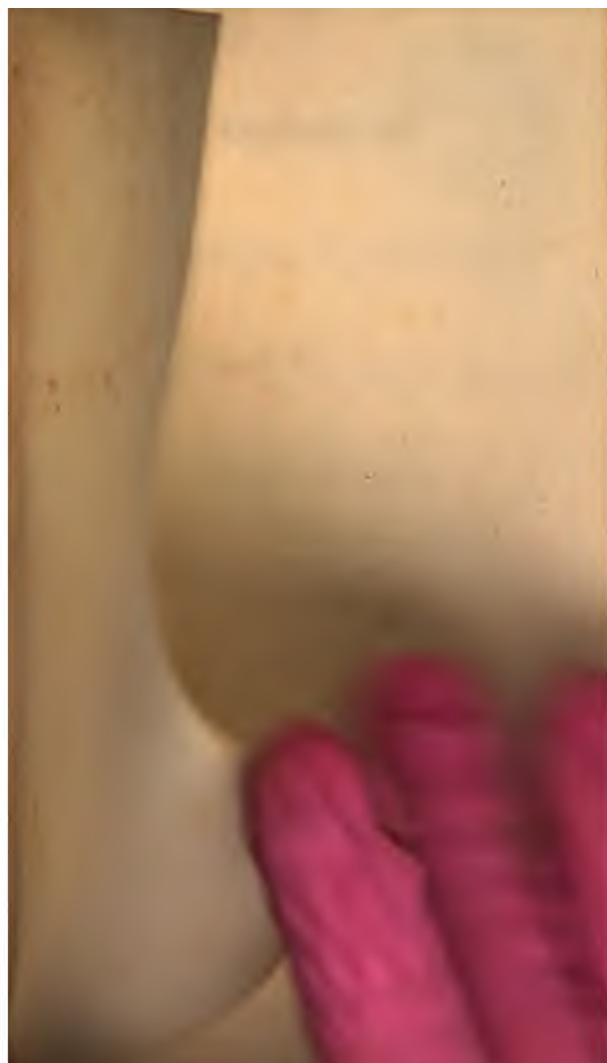


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ELEMENTS



OF

PRACTICAL MIDWIFERY;

OR,

COMPANION TO THE LYING-IN ROOM.

BY

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SOUTHWARK MIDWIFERY INSTITUTION;**

**AND LECTURER ON MIDWIFERY AND THE DISEASES OF
WOMEN AND CHILDREN, AT THE MEDICAL SCHOOL,
ALDERSGATE STREET.**

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PREFACE.

It is the author's intention, in the succeeding pages, to present to the Student of Midwifery, in a condensed form, those rules which are particularly applicable to the practical department of the science.

The frequent inquiries amongst his own pupils for a book of this kind will, he trusts, be a sufficient apology for the present undertaking; which is intended as a remembrancer in the lying-in room, and consequently will by no means supersede the necessity of consulting the more voluminous treatises on this interesting and important department of medical science.

To the gentlemen attending the author's lectures it cannot fail to be acceptable, as it will form a Syllabus of that part of the Course in which the varieties of parturition are described ; and, should the sphere of its usefulness extend no further, he will be amply rewarded for the time he has devoted in thus condensing and revising, for their instruction, the practical rules of the art and science of Midwifery.

93, *Bartholomew Close* ; 1829.

CONTENTS.

THE PELVIS	.	.	2
Os Innominatum	.	.	3
Sacrum	.	.	ib.
Os Coccygis	.	.	4
Division of the Pelvis	.	.	5
Diameters of the Brim	.	.	6
Outlet	.	.	ib.
Cavity	.	.	7
Bearing of Pelvis upon the Trunk	.	.	ib.
PRESENTATION AND SITUATION	.	.	9
LABOUR	.	.	10
Division of Labours	.	.	ib.
Premonitory Signs	.	.	ib.
NATURAL LABOUR	.	.	11
Division of Natural Labour	.	.	ib.
Symptoms attending Labour	.	.	12
Passage of the Child	.	.	14
Duties of the Accoucheur	.	.	15
Treatment of Stillborn Children	.	.	21

CONTENTS.

MANAGEMENT OF THE PLACENTA	.	.	22
RETAINED PLACENTA:			
From Torpidity of the Womb	.	.	24
— Spasmodic Action	.	.	25
— Adhesion	.	.	26
CAUSES IMPEDING LABOUR:			
Rigidity	.	.	27
Disproportion	.	.	28
Toughness of the Membranes	.	.	29
Excess of Liquor Amnii	.	.	30
Too early Rupture of Membranes	.	.	ib.
Distended Bladder or Rectum	.	.	31
Descent of Hand with the Head	.	.	ib.
Unfavorable State of Constitution	.	.	32
Imperfect Action of the Uterus	.	.	34
Shortened Funis Umbilicalis	.	.	35
PRETERNATURAL LABOUR			
Malposition of the Head	.	.	ib.
Presentation of the Feet	.	.	38
———— Breech	.	.	40
———— Knees	.	.	ib.
———— Arm	.	.	ib.
Operation of Turning	.	.	42
Presentations of Abdomen, Back, Nape of			
the Neck, and Throat	.	.	47
Presentation of Funis	.	.	ib.

CONTENTS.

vii.

Monsters	.	.	.	.	49
Labours with Plurality of Children	.	.	.	.	ib.
INSTRUMENTAL LABOUR	.	.	.	.	54
General observations	.	.	.	.	ib.
Long Forceps	.	.	.	.	57
Short Forceps	.	.	.	.	61
Lever	.	.	.	.	63
Perforator and Craniotomy Forceps	.	.	.	.	ib.
Superiority of Mr. Holmes' Instrument	.	.	.	.	66
COMPLICATED LABOUR	.	.	.	.	68
Labour with Uterine Hemorrhage	.	.	.	.	ib.
1. Before the Birth of the Child	.	.	.	.	71
Accidental	.	.	.	.	72
Unavoidable	.	.	.	.	75
2. After the Birth of the Child	.	.	.	.	79
With Retained Placenta	.	.	.	.	ib.
After the Birth of the Placenta	.	.	.	.	81
Internal Hemorrhage	.	.	.	.	82
General Observations on Hemorrhage	.	.	.	.	83
THE OPERATION OF TRANSFUSION	.	.	.	.	87
After-treatment of Hemorrhage	.	.	.	.	98
Labour with Hemorrhage from other Organs	.	.	.	.	102
— with Rupture of the Uterus or Vagina	.	.	.	.	105
— with Convulsions	.	.	.	.	107
— with Hernia of the Bladder	.	.	.	.	111

MANAGEMENT AFTER DELIVERY	.	.	113
After-pains	.	.	115
Lochia	.	.	122
Milk Fever	.	.	124

OCCASIONAL CONSEQUENCES OF PARTURITION.

Syncope	.	.	125
Laceration of the Perineum	.	.	127
Prolapsus of the Womb	.	.	128
Inversion of the Womb	.	.	130
Retention of Urine	.	.	131
Incontinence of Urine	.	.	132

ELEMENTS

OF

PRACTICAL MIDWIFERY.

THE PELVIS.

As this concise work is intended for those who are entering upon the practical part of Midwifery, and who consequently must be supposed to have made themselves acquainted with the structure of the parts concerned in parturition, it does not appear necessary to dwell long upon their anatomy. The bony structure of the pelvis will, therefore, be alone described, and that very briefly. When we consider that this part contains the internal

organs of generation; that it gives attachment to the external; that it affords a natural impediment to the passage of the child during labour; and that, from disease, its shape may become so altered as to present difficulties to the completion of that process insurmountable by nature alone; the importance of a thorough knowledge of the anatomy of the pelvis, before attempts are made to give assistance at the time of childbirth, will be sufficiently apparent.

The **PELVIS** is that portion of the skeleton situated at the lower part of the spine and above the thigh-bones: with the former it is firmly connected by cartilage and ligament; and with the latter, by means of the acetabula into which these bones are received.

The adult pelvis consists of four bones: two ossa innominata, forming the anterior and lateral parts; the sacrum, and the os coccygis, forming the posterior part.

In the foetus, and in early childhood, the os **INNOMINATUM** is distinctly divided into three portions: the ilium forming the upper, and by far the largest part; the ischium, the lower; and the pubis, the fore part. They all unite in forming the acetabulum, a cavity which receives the head of the thigh-bone. By this large mass of bone being thus, in the foetus, composed of three portions loosely connected together by cartilage, a certain degree of overlapping is allowed, by which parturition is somewhat assisted.

The **SACRUM** is a triangular bone situated at the posterior part of the pelvis, firmly connected to the spine above, to the os innominatum on either side, and to the os coccygis below. Internally it is concave: and this concavity is obstetrically termed the *hollow* of the sacrum; from the foramina at the sides of which, nerves of considerable size are passing out; and the pressure which these nerves undergo is the cause why parturient women so frequently

complain of "cramps" in the thighs. By its union with the last lumbar vertebra, a protuberance is formed, called the promontory of the sacrum.

The *os coccygis* is that small bone attached to the extremity of the sacrum, to which it is firmly connected; but in such a manner as to allow of a considerable degree of motion when pressed upon by the head of the child, and thus to enlarge the outlet of the pelvis. For this purpose we find the ends of both bones tipped with cartilage, and covered with synovial membrane; and there is a perfect capsular ligament to the joint. This joint sometimes yields with difficulty to the pressure of the child, whereby considerable pain and inconvenience is experienced by the patient.

The *ossa innominata* are united together before, and to the sacrum behind, in a very strong and effectual manner. But, although the *ossa innominata* are united at their upper part, we find they afterwards recede very

considerably from each other, passing downwards and backwards; and this separation, or divergence, forms an arch, of great importance in midwifery, which is called the Pubic Arch.

The PELVIS being formed by the junction of these bones, is divided into two parts: the great or false, and the little or true, pelvis; the former comprehending that portion situated above the linea-ilio-pectinea, which is a prominent line, commencing from the upper part of the junction of the ilium with the sacrum, and extending all round to the corresponding part on the opposite side; the latter comprehending the part below it.

DIAMETERS OF THE PELVIS.

The TRUE PELVIS, a knowledge of which is so essential to the accoucheur, is divided into the brim, the outlet, and the cavity.

The situation of the BRIM is marked by the

linea-ilio-pectinea just described, and is of an irregular heart-shaped figure; a line from before backwards, viz. from pubis to sacrum, measures four inches: this is the shortest, and is called the conjugate, or antero-posterior diameter. The lateral, measured from side to side, is five inches. The diagonal, from the acetabulum to the opposite sacro-iliac symphysis, measures five and a quarter, or five and one eighth, inches.

The OUTLET. Its shape, with the soft parts attached, is irregularly quadrangular, the diameters of which are about four inches either way, the measurements being taken from the symphysis pubis to the os coccygis, and from one tuberosity to the other: but it is to be remembered that the os coccygis yields to the pressure of the child's head during labour, receding a full inch, which will enlarge the diameter of the outlet from before backwards to this extent, whilst the transverse measurement remains the same. Thus, it is

to be observed that the long diameters of the brim and the outlet are opposed to each other; the former being from side to side, the latter from before to behind.

The CAVITY is that part situated between the brim and the outlet, bounded posteriorly by the concavity of the sacrum, anteriorly by the symphysis pubis, and laterally by the tuberosities of the ischia. The depth of the different parts of this cavity should be borne in mind when the situation of the child is examined. Anteriorly, the depth is only two inches; posteriorly, it is from five to six inches; and laterally, it is three inches and a half.

If an articulated skeleton be examined, it will be seen that the pelvis has an oblique bearing upon the trunk; the brim being neither horizontal nor perpendicular, but placed at a very considerable angle. In consequence of this arrangement, the gravid uterus, after it has risen out of the pelvis, has a tendency to

fall forwards, and is then supported by the brim. Where the pelvis is very capacious, the uterus is not supported by this part, but sinks into the cavity, by which many unpleasant symptoms are produced during the latter periods of gestation. Further, it is to be noticed that the shape of the pelvic cavity is described by a curved line; the axis of the brim being downward and backward, whilst that of the outlet is downward and forward.

When assistance is required in cases of difficulty, this knowledge is of no small importance, as we are enabled to adapt the line of motion to the axis of that particular part of the pelvis through which the child is being brought. This knowledge is of equal avail whether we are delivering by the head or by the feet.

PRESENTATION AND SITUATION.

The term presentation describes that part of the child which is opposed to the centre of the brim of the pelvis; and situation, its place with regard to the surrounding bones.

LABOUR.

By Labour is understood that action of the uterus which occurs at the full period of gestation, in consequence of which the foetus and its appendages (the placenta and membranes), are expelled from its cavity.

DIVISION OF LABOURS.

Labour may be divided into four kinds:

1. NATURAL.
2. PRETERNATURAL.
3. INSTRUMENTAL.
4. COMPLICATED.

PREMONITORY SIGNS. A short time previous to the commencement of labour, certain symptoms manifest themselves, which are

looked upon as indications of the approaching event, and have on this account been termed the premonitory, or the precursory, signs. These are, a feeling of activity and lightness on the part of the patient; a diminution of the abdominal protuberance; an increased vaginal secretion; frequently a sympathetic irritability of the bladder, and sometimes of the rectum also.

1. NATURAL LABOUR

presupposes the vertex to be the presenting part, the occiput situated toward the acetabulum, and consequently the face towards the opposite sacro-iliac synchondrosis; nature completing the delivery without manual interference.

Labour is divided into three parts, or stages: 1st, the opening or dilatation of the os uteri; 2d, the birth of the child; and 3d, the expulsion of the placenta.

At the commencement of labour, the patient complains of pains in the back, shooting through the abdomen, and frequently extending to the upper and inner part of the thighs; there is great irritability of the bladder, causing a frequent desire to pass her urine; her mind is desponding, and she becomes restless and fidgetty; the stomach frequently sympathizes, producing nausea and vomiting; a degree of shuddering, in some cases amounting to a rigor, is experienced, though in very many instances there is no sensation of coldness. The pains are usually of short duration, and the intervals between them uncertain: after a longer or shorter period, the os uteri begins to dilate, the mucous plug, by which it is naturally closed during gestation, comes away, usually streaked with blood from the ruptured decidual vessels; this appearance of bloody mucus is by nurses termed "*the shew*." If we examine, per vaginam, after the detachment of this plug, we find the

bag containing the liquor amnii gradually insinuating itself between the opening lips of the os uteri, and, by thus acting upon the principle of a wedge, greatly assists in its further dilatation. The os uteri being now dilated, the pains assume a very different character; the abdominal muscles strongly assist the contraction of the uterine fibres, producing an involuntary forcing-down effort on the part of the patient; the bag bursts, and the waters are discharged; the pains increase; the womb contracts closely round the body of the child, and by repeated efforts expels it through the os externum: and this completes the second stage.

If the labour has been properly conducted, the third stage occupies but a very short time, the contractions of the uterus being speedily renewed, by which the secundines (the placenta and membranes) are soon detached.

PASSAGE OF THE CHILD DURING LABOUR.

At the beginning of labour the child's head rests upon the brim of the pelvis; the vertex presents, with the occiput directed to one of the acetabula, the chin being bent upwards upon the chest; by which contrivance the long diameters of the head and of the pelvis correspond. When the waters have escaped, the uterus, acting forcibly upon the body of the child, propels it, at first, downwards and backwards, in the direction of the axis of the brim. When the head has completely entered the cavity of the pelvis, a turn is effected, by which the face is thrown into the concavity of the sacrum; whilst the occiput, escaping under the arch of the pubis, protrudes at the orifice of the vagina. By this turn a double good is effected: 1st, the long diameter of the head is made to correspond with that of the outlet; and, 2dly, the shoulders are brought into a situation favorable for their passage through the brim. The pains continuing, the

head is soon expelled, the symphysis pubis forming a fixed point upon which it turns round, the face in its passage sweeping over the perineum. When the shoulders have descended into the cavity, nature turns the child sideways, in order that they also may be brought into the most favorable situation for their final extrusion; they then readily pass the outlet, and are soon followed by the trunk and lower extremities.

DUTIES OF THE ACCOUCHEUR. The first duty that devolves upon the accoucheur, upon entering the lying-in room, is to ascertain that the female is actually in labour. Now, from the close resemblance which subsists, in many instances, between the false and the true pains, this can only be done by an examination per vaginam; but, as this operation must at all times be offensive to the delicate feelings of the sex, it should not be proposed too abruptly: it is well, therefore, to enter into a

little conversation before it is had recourse to. The most convenient position in which the patient can be placed is on her left side, the buttocks being close to the edge of the bed, the knees elevated towards the abdomen, and the chest bent rather forwards towards the knees. The forefinger, having been previously anointed with some unctuous substance, is to be passed into the vagina, and carried forward till it reaches the os uteri, which, at the beginning of labour, is usually high up, and directed backwards towards the sacrum. If the pains are not the true parturient paroxysms, it will be found that, however violent they may appear, still no effect will be produced upon the os uteri; it will remain closed. But if we find that, during their continuance, the lips of the os uteri are gradually opening, and that a portion of the membranes is protruded between them, in the form of a tense bladder, then we may rest assured that labour has actually begun. Before the hand is

withdrawn, the presentation should be carefully ascertained: for this purpose the finger must remain in the vagina until the pain has subsided, and then gently carrying it forward within the uterus, it is to be cautiously passed round the presenting part. If it be natural, the vertex will be distinctly felt, and, by tracing the sutures, the situation of the child may also be ascertained. Being satisfied that the patient is in labour, and the presentation natural, on withdrawing the hand (which ought to be wiped, under the bedclothes, with a napkin), the patient may be informed that every thing is going on favorably. This intelligence will have the effect of quieting her mind, and should always be afforded her.

No further manual interference is either necessary or proper during the first stage of labour. The patient is to be encouraged occasionally to empty the bladder and rectum; and, in order to afford her an opportunity of so doing, the practitioner should leave the

room. Some light unstimulating nourishment may from time to time be given, and she may be allowed to walk, sit, stand, or lie down, according to her inclination.

But, when the second stage has commenced, she must be confined to the bed in the position just recommended; the practitioner taking his seat by her side. A broad belt or bandage (a long towel answers the purpose exceedingly well,) is now to be applied round the abdomen, the two ends being given to an assistant to hold firmly; or they may be pinned together with three or four stout blanket pins. The bandage must be progressively tightened as the head descends, so as to keep up a constant and uniform degree of pressure upon the uterine region. This should be particularly attended to during and after the expulsion of the child. A napkin is to be placed under the hips, which is to be removed when it becomes soiled, and a dry one applied in its stead.

When the head is beginning to protrude through the labia, the palm of the left hand should be placed flatly, but not forcibly, against the perineum, in order, by thus supporting it, to protect it from laceration. The fore and middle finger of the right hand may also be pressed gently against the head of the child, in order that it may not be too suddenly expelled.

As soon as the head is born, if the cord be coiled around the neck, (which it frequently is,) it may be gently drawn forward, and passed over the occiput: if this cannot be accomplished, it should be loosened by the finger, and pushed back over the shoulders during their expulsion. The hand is also to be passed over the face, to ascertain that no portion of the membrane is still covering it; several well-authenticated cases being upon record where respiration has been prevented by this circumstance. At this period it is also common for the nurse to bring a small flannel

cap, which is to be placed upon the child's head.

It is of vast importance that the body and lower extremities of the child be not forcibly dragged away by the accoucheur. It is far better rather to retard than to accelerate their birth: this may be done by placing the hand round the nape of the neck, and opposing a slight degree of resistance. By so doing, the uterus is made to act with greater force; and the consequence is that, in a very large majority of instances, the same pain that expels the feet also detaches the placenta, and propels it into the upper part of the vagina.

As soon as the child breathes, two ligatures, formed of about ten threads each, are to be tightly tied round the funis; one about three inches distant from the child's abdomen, the other a little nearer the placenta. The cord is to be divided between them; the scissors used for this division being probe-pointed. The infant is then to be removed, and placed

in the receiver, which is merely a piece of flannel prepared for that purpose.

Owing to the compression which they undergo, children are sometimes apparently born dead. From this stillborn state, as it is called, they may, however, very frequently be recovered by proper management. Where there is the slightest pulsation in the funis, it must be allowed to remain untied till the breathing is established. Friction over the region of the heart may be employed with the hand alone, or with a small quantity of ardent spirit. Artificial respiration is also necessary: this is accomplished by inflating the lungs, alternately blowing into the mouth, and depressing the ribs by pressure with the hand; care being, at the same time, taken to close the nostrils. The opening into the œsophagus should also be shut, which may very effectually be done by pressing the larynx pretty firmly backwards against the spine. If this precaution were not taken, the air would, of

course, find its way into the stomach and bowels. Immersion in hot water is another powerful means of restoring stillborn children: warm water is not sufficient; it ought to be as *hot* as can be borne without injuring the delicate skin of the child. The breathing of newly-born infants is frequently impeded by the collection of a quantity of mucus around the mouth and fauces: where this is the case, it should be carefully wiped away with a clean napkin.

MANAGEMENT OF THE PLACENTA.

The child being consigned to the arms of an attendant, the hand of the accoucheur is to be placed upon the patient's abdomen, and pretty firm pressure made, in order that the uterus may be felt. If it be found small and hard, we may be certain that it contains no other fœtus, and the probability is that the placenta is expelled from its cavity; and this

will generally be found to be the case where due attention has been paid to the tightening of the bandage, and due care taken to retard rather than to hurry the birth of the lower extremities of the child. In order to be certain, however, with regard to the placenta, an internal examination is required, when, if detached, it will very readily be felt at the upper part of the vagina, sometimes resting upon the symphysis pubis. From this situation it may be removed without difficulty, by twisting the funis round the left hand, and making slight extension downwards and backwards in the direction of the axis of the brim, whilst, with the fore and middle fingers of the right hand, it is tilted into the concavity of the sacrum; thus imitating the passage of the head. When brought through the external parts, it should be received upon a napkin, in which it is to be wrapped up under the bed-clothes, from whence it may be conveyed into any convenient receptacle.

RETAINED PLACENTA.

This effect may be produced by three different causes:

- 1st. *Torpidity of the uterus;*
- 2d. *Spasmodic action;*
- 3dly. *Adhesion of the placenta to the parietes of the uterus.*

1st. *Torpidity or inaction of the womb* generally occurs from an exhausted state of the organ, in consequence of a protracted labour. When the hand is placed upon the abdomen, it will be large, flaccid, and flabby: the uterus being uncontracted, of course no hard tumor is perceptible. If the finger be passed into the vagina, the cord may be traced within the os uteri, but no placenta can be felt.

Treatment. Some nourishment may be given the patient, and brisk friction employed over the uterine region. If this does not prove

effectual, (which, however, it usually does,) half a drachm of powdered ergot may be given in warm tea.

2d. *Spasmodic action.* If the placenta be retained from this cause, the patient will complain of constant pain; and, if the hand be so placed upon the abdomen as to grasp the uterus, it will be found to be hard and contracted in one part, soft and flabby in another. Sometimes contraction of those fibres situated around the centre of the organ alone takes place, whilst the others remain relaxed, which must necessarily have the effect of dividing the uterus into two chambers, and then, from its shape, it is termed the hourglass contraction. This is, however, of rare occurrence: it is much more common for the circular fibres to contract pretty generally, whilst the longitudinal remain relaxed; and the placenta will then be completely shut up within the uterine cavity. If the uterus be

examined through the abdominal coverings, it will be felt hard and of large size. The cord may also be traced with the finger, passing through the contracted os uteri, whilst the vagina remains relaxed below; and this state of parts has been often confounded with hourglass contraction.

Treatment. Friction to the abdomen, and the application of cloths dipped in cold water. As a last resource, the introduction of the hand into the uterus, the dilatation of the strictured part, and the removal of the placenta. In very obstinate cases, a full dose of opium is necessary.

3d. *From adhesion.* When, after delivery, the patient continues to have strong uterine action, (and this is ascertained by pressing upon the abdomen,) and the placenta remains behind, there is reason to believe that there is an unnatural adhesion to the sides of the womb.

Treatment. After waiting an hour, if it be not expelled, the hand may be very cautiously introduced, the placenta separated, and brought away. If hemorrhage occur, no time should be lost; the hand must be introduced instantly.

CAUSES WHICH IMPEDE LABOUR.

Many are the causes which tend to obstruct the process of parturition, but they may be referred to two general heads; viz. to increased powers of resistance, or to decreased powers of expulsion.

OF THE FIRST VARIETY. *Rigidity of the parts of generation*, either of the os uteri or of the external parts, or both, is one of the most common causes which produce increased resistance, (more particularly in a first labour.) There is generally a deficient vaginal secretion, the parts feel hot, and the female is feverish.

Treatment. The patient is to be confined to the horizontal posture; a quantity of blood (proportioned, of course, to her strength and constitution,) to be taken from the arm; the rectum emptied by means of an enema, and afterwards a full dose of opium administered. The repeated application of warm wet cloths to the perineum is also useful, by encouraging the mucous secretion, and thus giving the parts a greater disposition to dilate. Frequent examinations *per vaginam* ought to be avoided, and great care taken not to rupture the membranes.

Disproportion between the size of the head and the bony structure of the pelvis, is also another cause. Thus, the pelvis may be distorted, or the head may be larger than usual, or its sutures may be closely ossified, so that it cannot be squeezed into the proper shape for its passage through the cavity. Again, the head may be greatly enlarged by the accumulation of water within it.

Treatment. The slighter degrees of disproportion will be overcome by nature's unassisted efforts, though a considerable time may be required. The patient's strength may be supported by unstimulating nourishment, her spirits kept up by cheerful conversation, and great attention paid to the bladder and rectum. In the greater degrees of disproportion, recourse must be had to instrumental interference. Where the difficulty arises from an accumulation of water, the scalp may be punctured with a pair of scissors or a trocar; the fluid escaping, the bones of the cranium will collapse, and the child will then readily pass.

Unusual toughness of the membranes containing the liquor amnii occasionally, though not very frequently, produces increased resistance. This is known by their not giving way at the usual period; the patient at the same time experiencing bearing-down pains.

Treatment. When the parts are thoroughly dilated, the end of the finger, or a blunt-pointed probe, should be passed through the bag during a pain.

A very large quantity of liquor amnii is sometimes the cause of protracted labour. When it is contained in that part of the bag which protrudes before the head of the child, it is easily distinguished; when behind it, we shall find, if we press with a finger upon the presenting part, in the absence of pains, that it will suddenly recede and get out of reach.

Treatment. Precisely the same as in the preceding case.

Too early rupture of the membranes, by destroying the natural wedge by which the os uteri is dilated, is not an uncommon cause of protracted labour; the process not only being delayed, but rendered much more painful.

Treatment. These labours are generally

slow in their progress, and are rather retarded than hastened by manual interference.

A distended state of the urinary bladder, or of the rectum from an accumulation of hardened fæces, will prove a serious obstacle to delivery, not only from the encroachment which is necessarily made upon the pelvic cavity, but also from the uterine paroxysms being sensibly diminished till the causes are removed. There is, therefore, a double disadvantage; the powers of resistance being increased, whilst those of expulsion are diminished.

Treatment. The catheter, and large emollient enemata, are the obvious remedies.

Descent of the hand along with or before the head will sometimes retard the progress of a labour, especially if it be a first labour, and the parts rigid, or should there be a large head or a small pelvis. This is easily detected, as the fingers can be felt without difficulty.

Treatment. It has been recommended by some, that the hand should be pushed back over the head; but experience has amply proved that, in a large proportion of instances, this mode of proceeding is not necessary, these cases merely requiring a longer time for their completion than ordinary ones.

OF THE SECOND VARIETY. *An unfavorable state of the patient's constitution* will greatly interfere with and impede the parturient actions, whether it be in consequence of a state of plethora, or of the opposite state, viz. that of inanition. These two conditions are easily recognized by the general appearance of the patient. In the former there is a flushed state of countenance, headach, a pulse either full and round, or contracted and hard, a coated tongue, thirst, and generally a deficiency of the mucous secretion from the vaginal surface; the parts of generation hot and tender: this tenderness sometimes extend-

ing over the uterine region, in which case internal inflammation may be suspected.

In the latter the pulse is feeble, though perhaps quick; the skin cool, moist, and flabby; there is sometimes a feeling of great oppression over the eyebrows: the parts of generation dilatable, and bathed with a copious secretion.

Treatment must, of course, be regulated by the cause which produced the symptoms. Where there is a plethoric state of system, abstraction of blood is at first to be had recourse to; the bowels are then to be freely opened, the room to be kept cool, and perfect quietude and the recumbent posture strictly enjoined; unnecessary examination per vaginam to be avoided.

An opposite mode of treatment is required where the patient is debilitated and exhausted. Nourishment may be administered, and a little stimulus allowed, such as mulled wine, or weak and hot brandy and water.

When the female has somewhat rallied, it will become a question whether it will be more to her advantage to expedite or to retard delivery. If the pains have altogether subsided, and there be a disposition for sleep, a full dose of opium may be given, and quietness strictly observed, in order that rest may be procured: but, if nature appear to be on the alert, if the pains regularly continue, though defective in power, twenty-five grains of pulv. secalis cornuti may be exhibited in warm tea, and repeated in the course of twenty minutes, if necessary. The effect of the ergot is in these cases frequently very decided; the pains, after a short period, increasing both in frequency and in force, and continuing till the delivery is completed.

Imperfect action of the uterus. For the purposes of labour it is necessary that there should be a perfect contraction of the whole muscular structure of the womb; but this

action is sometimes partial only, which produces considerable distress to the patient, without advancing the labour. In these cases there is no freedom from pain, although it may be aggravated at intervals. If the hand be placed upon the uterine region, and pressure applied, the uterus will sometimes be found to have an irregular feel, one part being much firmer and harder than another.

Treatment. If the patient be plethoric, blood must be removed from the arm, the bowels attended to, and opium, both by the mouth and by enemata, administered in large quantities. If, on the contrary, the female be weakly and irritable, the bloodletting is inadmissible.

A shortened state of the funis umbilicalis is now and then, though very unfrequently, a cause of protracting labour: under these circumstances the head remains a considerable time at the outlet, though the pains continue

severe; but it is not till after the expulsion of the child that the cause can be ascertained.

Treatment. Care should be taken to put the cord as much as possible off the stretch, by bending the body of the infant towards that of the mother. The funis ought to be divided as soon as within reach.

2. PRETERNATURAL LABOUR

includes every variety of presentation and situation of the child, excepting that described as occurring in natural labour; cases of monstrosity; and also those in which the uterus contains a plurality of children.

Malposition of the head. The head of the fœtus may present in various ways: thus, it may be a vertex presentation, with the occiput directed towards the sacro-iliac synchondrosis, instead of the acetabulum. It may be a presentation of the forehead, of the side of

the head, (in which case the ear is easily recognized,) or of the face: in none of which, with the exception of the ear, need manual interference, for the purpose of rectifying such position, be had recourse to, as nature very generally completes the task herself, without injury either to the mother or the child, though these labours are tedious and severe. If the patient's strength seems to be giving way, assistance may be given with the forceps after the head has descended. The propriety of using much exertion in order to bring down the vertex, may be fairly questioned when the parts are rigid and indisposed to dilate; and, if they are lax and yielding, the mucous secretion copious, and the pelvis well formed, there will be no occasion for such interference.

In presentations of the ear, (which are exceedingly rare,) the child should be turned, and brought down by the feet.

Presentation of the feet is known by the lengthened form of the membranes which protrude through the os uteri, by the shape of the toes, the projection of the os calcis, and of the malleoli. This presentation can only be confounded with that of the hand, from which it may readily be distinguished by the signs just enumerated, and by attending to the difference in the relative situation of the parts with which they are articulated. If it be the hand, it will be in a state of pronation, and consequently will be in a direct line with the forearm; whilst, in a presentation of the foot, this part, from the nature of the articulation, will always be found at right angles with the leg.

Treatment. The most favorable position of the child in these cases is with its toes directed to the mother's back, as the head will, under such circumstances, pass through the pelvis with much greater facility than when they are placed in the opposite direction: if, therefore, upon examination, they are found

to be thus situated, no interference is required till the scapulæ are about to pass through the outlet; it then becomes of great importance to prevent the arms from being pressed between the occiput and symphysis pubis; for, if they become thus wedged in, the delivery of the head will be rendered extremely difficult. In order to prevent this occurrence, the fingers are to be introduced into the vagina, and the arms gradually and cautiously (for fear of fracture) thrown backwards into the hollow of the sacrum, from whence they may be easily extricated, by sweeping them, as it were, over the perineum. If this operation be performed rudely and violently, not only will there be danger of fracturing the bones, but also of lacerating the perineum. Sometimes difficulty is experienced in the delivery of the head, especially if there be any disproportion existing between its size and that of the pelvis: now, as the cord must necessarily suffer from compression when the head has descended

into the cavity of the pelvis, it becomes of great importance that it be born as speedily as possible. The finger being passed into the child's mouth, and a little pressure made upon the lower jaw, in a direction downwards and forwards in the axis of the outlet, will assist greatly in bringing out the head from under the arch of the pubis. When the breech and the head are passing the external parts, the perineum must be carefully guarded.

Where the child is coming down in a different situation, viz. with the toes towards the mother's abdomen, then, as soon as the buttocks have passed the os externum, it is proper to grasp them with both hands, and gently to turn the body of the child, so as to place it in a more favorable position, viz. with the face to the mother's back; after which, the delivery is to be conducted according to the rules just laid down.

Presentation of the breech. This presentation is known by the prominences of the buttocks, the cleft between them, and frequently by the organs of generation being distinctly to be felt; occasionally there is also a discharge of the meconium. The most favorable position is where one of the buttocks is directed to the acetabulum, the other to the sacro-iliac junction.

Treatment. No interference is required until the breech has passed the outlet, when the same plan is to be pursued as in presentation of the feet.

Presentation of the knees is to be treated in the same manner.

Presentation of the arm or hand is known by the length of the fingers, the situation of the thumb, and the shape of the articulation. (Vide *Presentation of the Feet*.) Sometimes the scapula is the presenting part, the arm

lying across the pelvis; in which case care is required, or it may be confounded with the crista of the ilium. This mistake may readily be corrected by bearing in mind that the scapula is moveable, whilst the ilium is fixed.

Treatment. These presentations can only be rectified by the operation of turning the child in utero, and converting it into a footling case, by bringing down the feet; a proceeding which requires the utmost caution, or the soft parts of the mother are likely to be injured. This ought not to be commenced, until the os uteri and external parts are sufficiently dilatable to allow the hand to be introduced without violence. The bladder and rectum should also be emptied; and, if the uterus be in a comparatively quiescent state, the difficulty will be greatly diminished; and hence the necessity of bloodletting and the administration of opium in cases where the female is plethoric, and the womb is acting forcibly. If violence were used under such circumstances,

the probability is that laceration or contusion would be the result. In women of irritable and delicate habits, the bloodletting must be dispensed with, and the opium alone trusted to.

When about to turn, the situation of the presenting hand is to be carefully noticed, whether the palm be directed forwards towards the pubis, or backwards towards the sacrum, as it will always be found pointing to that part of the uterus in which the feet are to be found. The right or left hand may then be used at the operator's convenience; the right reaching more readily the anterior, and the left the posterior part of the organ.

Before the operation be commenced, the back part of the hand and arm ought to be well smeared over with oil, lard, or pomatum, in order to facilitate its introduction. The patient is to be placed on her left side, with her buttocks close to the edge of the bed. It is but seldom, if ever, necessary to push back the presenting part into the uterus, as it gene-

rally revolves very readily when the feet are brought down. The fingers and thumb of the accoucheur should be so adjusted as to enter the vagina in a conical form, and, in the progress of the hand, the peculiar curvature, and the axes of the different parts of the pelvis through which it is passing, carefully remembered. The introduction is greatly facilitated by carrying the hand forward in a sort of zig-zag manner, and not by sudden jerks. When the os uteri is reached, the membranes ought to be broken, (and this should be done in the absence of pain,) the hand at once being passed into the uterine cavity, and directed to that part in which the feet are situated; cautiously however resting, and laying the palm flatly upon the body of the child, at each renewal of the uterine efforts. If both feet can be readily found, it is better to bring them down together; but, if much difficulty be experienced in reaching the second, the child may easily be turned by laying hold of one. After

having grasped one or both feet, they are gently to be drawn down, taking care to bring them over the child's abdomen, and not over the back; when they have passed the external orifice, the position of the child must be attended to, that the head may be brought into the pelvis in the most favorable situation for its passage through that cavity, (see *Presentation of the Feet*,) when there will be no further difficulty in the completion of the delivery.

The operation of turning a child in utero is much more easily performed if attempted early, before the rupture of the membranes containing the liquor amnii; for, when this escapes, the uterus contracts forcibly around the body of the child, and affords great, and in some few instances irresistible difficulties to the introduction of the hand; the child descends, and becomes so completely jammed into the cavity of the pelvis, that the operation

would be attended with infinite danger to the mother. Under such circumstances the case must be strictly watched, and, if the strength of the patient keeps up, the uterine action powerful, and, above all, if, with each returning pain, the presenting part is evidently descending, or (to use the words of the justly celebrated Dr. Haighton,) "if we find that nature shews a disposition to be upon the move," then, at any rate for a time, she may be safely trusted to; it being, under such circumstances, reasonable to presume that she will be able to complete the delivery by expelling the child in a doubled state; and, as in these severe cases the fœtus is generally dead, no anxiety need be entertained on its account. The death of the child is, indeed, to be regarded as favorable in these cases, for, when putrefaction has taken place, this doubling process is the more readily effected.

But, on the other hand, should the strength of the mother begin to fail, or, notwithstanding

the continuance of the pains, the child remain fixed in the pelvic cavity, or untoward symptoms arise, such as marks of incipient inflammation, &c.; then it will become necessary for the delivery to be instantly accomplished by the evisceration and subsequent extraction of the fœtus. Dr. Denman appears to have had great reliance upon the powers of nature in such instances; but it is now a point of practice agreed upon by all, never to trust to her where turning can be safely performed at the full term of utero-gestation. It is well known that, at the sixth month, this process (of doubling) very readily takes place.

In presentations of the *abdomen*, the *back*, the *nape of the neck*, or the *throat*, delivery must be effected by the operation of turning.

Presentation of the funis. Although the descent of the umbilical cord into the cavity of the pelvis does not interfere with the partu-

rient process, still, from the pressure to which it must of necessity be subjected, the circulation through it becomes interrupted, and the infant frequently perishes if nothing be done for its rectification.

Treatment. A piece of soft sponge is to be introduced into the vagina, and passed up into the uterus, the funis being carried beyond the head by pressure being thus made against it. The sponge is then to be left, which, by imbibing moisture, will so far increase in size that it will not again descend till after the birth of the head. Where, however, there is much rigidity or irritability in the parts of generation, this plan must not be attempted, or it will be productive of great pain. The best plan in these cases is merely to place the cord in that part of the pelvis in which it will be exposed to the least pressure during the descent of the head.

• MONSTERS.

The term Monsters is applied to those children who differ from the ordinary shape, whether this difference consists in a redundancy or a deficiency of parts.

It may be observed, that monstrous births are generally premature; but, should the female proceed to the full period of utero-gestation, no difference in the management of the labour will be required. The accoucheur will, in some instances, be greatly puzzled to discover the presentation.

LABOURS WITH PLURALITY OF CHILDREN.

It is a very uncommon occurrence for the human uterus to contain more children than two, though a few well-authenticated cases are recorded in which three, four, and even five, have been detected within its cavity.

From the returns of the London and Southwark Midwifery Institution, it appears that twin cases have occurred in the proportion of about one in eighty labours; and, although that Institution has been in active operation for the last eight years, no case of triplets has been recorded.

Twin labour. Certain symptoms have been mentioned by authors to enable us to detect, even before the delivery of the first child, the existence of a plurality within the womb. These signs are, however, so exceedingly equivocal, that time would be wasted in enumerating them, especially as it would conduce to no useful purpose; the rules applicable to single births being equally so where there are two or more children in utero.

After the first child is born, the hand being placed upon the female's abdomen, the parietes will feel tense and hard, and there will appear to be but little diminution in size; and

when an internal examination is made, the bag containing the second child will generally be easily felt.

Treatment. The delivery of the first child is to be conducted upon the usual principles. With regard to the second, two methods have been recommended: the one to trust the case entirely to nature, the other to interfere immediately for the purpose of hastening the birth. In general, the best practice lies between these two extremes, for the patient is frequently somewhat exhausted after the expulsion of the first child, and consequently requires a little time to recruit herself. Under these circumstances nourishment should be administered, and, if the pains are not then renewed, the membranes may be ruptured, and the os uterigently stimulated by passing the finger round it; when the uterine efforts will soon be repeated. If dangerous symptoms manifest themselves, such as hemorrhage, convulsions, &c., of course no time must be lost, but the

child extracted as speedily as possible. Where the position of the second foetus requires to be rectified, it can be effected with the utmost ease, in consequence of the already dilated state of the parts. There is sometimes only one large placenta, with which the two funes communicate; at other times there are two distinct placentæ, connected however to each other by the membranes; and occasionally, though not very frequently, the vascular structures unite through the medium of one or more vessels, which pass from the one to the other.

The same general rules apply to the management of the placentæ as in single births. They are usually expelled together after the birth of both children, and it is of great consequence that they are not too suddenly hurried away. When, from any cause, it may be considered right to assist in their removal, (as, for example, where they are lying in the vagina,) both cords are to be laid hold

of, and the same extracting efforts will then be made use of to each.

In the management of twin labours, great care must be taken gradually to tighten the bandage around the abdomen, as, in consequence of the exertion the uterus must necessarily undergo, there is more than the usual risk of hemorrhage; and, when this occurrence takes place, it is apt to be more profuse in consequence of the large extent of uterine surface which is occupied by the two placentæ. This is the reason why the discharges after delivery are greater than in single births, as they flow from the whole of that surface.

Where the uterus contains more children than two, the labour will require the same management.

3. INSTRUMENTAL LABOUR.

There is, perhaps, no part of a medical man's duty which involves a higher degree of responsibility, than a decision as to whether the use of instruments be really required for the preservation of the life either of the mother or of the child. Many circumstances must be considered before a correct opinion can be formed: such as the length of time the female has been in labour; the cause which has given rise to the difficulty; the constitutional effect produced upon the mother, whether she be calm, tranquil, and disposed to sleep, or whether the system is getting into an irritable state, and shewing marks of fever or of inflammation: for a labour may in some instances be protracted for several days, and yet be safely trusted to the powers of nature; whilst, on the other hand, cases may occur in which the most prompt treatment is required, in consequence of the effect produced upon

the system. Where it is found that, although the pains continue severe, the head still remains fixed in its position for several hours, then it will afford a proof that there is more than the ordinary degree of difficulty, and the patient should be narrowly watched. The state of the bladder and rectum should not be lost sight of, lest, by the continued pressure of the head of the child, they become exposed to injury: as the pulse rises in frequency as soon as any internal part is suffering from this circumstance, the state of it (the pulse) may be regarded as an useful adjuvant in determining the propriety or impropriety of having recourse to instrumental interference.

The young accoucheur is particularly cautioned against an unnecessary multiplication of instruments, as they will only serve the purpose of confusing and perplexing him. The safety of these cases depends much more upon the head that directs, than upon the instrument which effects the delivery; and

hence the reason why different men have argued so long and so loudly for the superiority of one instrument over the other.

Instruments are divided into two classes: 1st, those which are not necessarily destructive to either the mother or the child; and, 2d, those by which the child is destroyed for the purpose of saving the mother.

Of the first class are the forceps, both long and short, and the lever.

Of the second, are the perforator and the craniotomy forceps.

In all cases requiring the use of instruments, the bladder and rectum ought to be emptied previous to their introduction; the os uteri and external parts ought also to be well dilated, and the presentation and situation of the head correctly ascertained. The patient is to be placed near the edge of the bed, on her left side, the shoulders a little elevated, and the thighs separated by placing a pillow between the knees.

Long forceps. This valuable instrument has, until of late years, been too much neglected, and it is greatly to be feared that the lives of many children have been destroyed by the perforator, which might have been saved by the judicious employment of the long forceps. It is applicable in cases of deformed pelvis, wherein the deformity exists at the brim; the conjugate diameter, for example, being too straightened to allow of the passage of the head by nature's unaided efforts, and yet the contraction being too slight to warrant the mutilation of the child by lessening the size of its head; and, in fact, in all cases in which delivery is required with the head at the brim, and where, from any existing cause, turning may not be thought advisable; as, for example, in cases of hemorrhage, convulsions, &c.

In the more severe degrees of deformity however, where, for example, the distance from pubis to sacrum is under three inches, their use should not be attempted; for, as

in these cases the child cannot be expected to be saved, it is better at once to use means by which the mother will be exposed to less risk.

The length of these forceps is about fourteen inches; the perfectly straight ones are the best, the curve recommended by some answering no useful purpose. It is of great advantage that they be made according to the suggestion of Dr. Blundell, the talented lecturer at Guy's Hospital; viz. with a very loose lock : by which contrivance the blades may be joined together, and a very firm hold of the head obtained, even where they have not been applied in an exact line with each other.

Manner of applying the long forceps. In cases requiring the use of this instrument, the contraction is from before backwards, or from pubis to sacrum; it therefore should be so introduced that, when joined together and locked, the blades shall be lying in the sides of the pelvis, embracing in their grasp the

occiput and the forehead. For this purpose, after having warmed and anointed the blades, one is to be taken in the right hand, and carefully guarded to its place of destination by two fingers of the left hand previously introduced into the vagina. When applied, it is to be retained in its situation by an assistant, and the second blade introduced in like manner. When both blades have been properly introduced, viz. the one over the occiput, the other over the forehead, the handles are to be brought together and locked; great care being taken not to include any of the soft parts of the mother. After they have been united together, a very gentle degree of extracting force is at first to be made use of, in order to ascertain whether the instrument be properly applied, and a secure hold of the head obtained. It is better not to bind the handles together with tape, as formerly was recommended; for, by so doing, a constant and injurious pressure is kept up upon the

yielding bones of the child's head. In delivering with the forceps, the force should be employed at intervals only; and, if pains are present, it may be used during a pain; the patient being examined from time to time, more especially as regards the state of her pulse, in order to be satisfied that no violent efforts are made use of, likely to endanger the soft parts, by producing contusion: it being well known that the pulse takes the alarm, and rises in frequency, directly the parts are injured by pressure. The situation of the axis of the brim (the part through which the head is first to be brought,) is strictly to be borne in mind, and the force employed in that direction. When the brim has been passed, and the head brought into the cavity of the pelvis, the forceps are to be removed; and, if the uterus be acting vigorously, the delivery will soon be accomplished. Where this is not the case, they may again be applied, the blades being passed over the sides of the head; or

the short forceps may be employed, in the manner presently to be described.

Short forceps. This instrument can only be employed when the head of the child has descended considerably into the cavity of the pelvis; and, indeed, not until an ear can be distinctly felt by the finger, without the introduction of the hand into the vagina. In consequence of this situation of the head, delivery is more readily accomplished by the short than by the long forceps, and the risk of injuring the soft parts of the mother proportionally lessened. When about to operate, the bladder and rectum should be attended to, as before recommended; the instrument to be guided carefully up the vagina, and over the ears of the child, until the lock reaches the external parts. In a vertex presentation with a natural situation, viz. with the occiput to the acetabulum, and the face to the sacro-iliac symphysis, very little difficulty

will be experienced in the application of the instrument. When both blades have been carried along the sides of the head, they are to be brought together and locked; and, when the pains come on, a gently extracting force employed, at first downwards and backwards, till the head nearly reaches the perineum; a half turn is then to be given, so as to throw the face into the hollow of the sacrum, and the occiput under the arch of the pubis. The line of motion must now be altered; for, instead of being downwards and backwards, it should be downwards and forwards in the axis of the outlet. Great care is required in the delivery of the head; it should be brought through the external parts in the most cautious and slow manner, the perineum being supported by an assistant, in order to prevent laceration.

The head being born, the instrument is to be removed, and the delivery completed as in ordinary circumstances.

The bandage around the abdomen ought to be particularly attended to, for, in cases requiring the use of instruments, there is frequently a tendency to hemorrhage.

Where the face is towards the pubis, or where it is the presenting part, the forceps are still to be applied over the ears of the child. A more than ordinary degree of care is in these instances required in delivering the head, as the perineum will be put greatly upon the stretch.

Lever. The lever, or tractor, is applicable in every case to which the forceps may be used, and although a most valuable instrument in some hands, yet it is not so easily managed, nor upon the whole is it so safe, as the forceps; and therefore the latter is recommended in preference to the former.

Perforator, and craniotomy forceps. As, in the use of these instruments, the life of the

infant must be sacrificed, the actual necessity for their employment ought to be well and clearly ascertained before recourse is had to them. It has before been noticed, that if the conjugate diameter of the pelvis be less than three inches, it would be better not to attempt the delivery with the forceps, because the life of the child, under such circumstances, is not likely to be saved, and the soft parts of the mother would be in danger of suffering from the contusion which they must of necessity undergo; but, as it is not always easy correctly to ascertain the dimensions of the living pelvis, it will be right, in every doubtful case, to make a gentle and steady attempt with the long forceps, before the head be opened; taking, however, especial care not to make use of an undue degree of violence, for fear of contusing or lacerating.

It unfortunately happens that the operation of craniotomy is a very easy one, much more so than the application of the forceps; and is,

perhaps on this account, in many instances, too hastily resorted to.

When, after due deliberation, it is judged expedient to open the foetal head, the rectum and bladder having been attended to, the patient is to be placed in the same position as before recommended; the left hand of the operator is to be carried along the vagina, until the fingers rest upon the head. These will serve as a director for the perforator, which is nothing more than a long pair of sharp-pointed scissors, which are then to be introduced with their points carefully guarded by the forefinger of the right hand, until they reach the presenting part. An opening being made by passing the instrument through the cranium with a sort of boring motion, and this opening having been enlarged to a sufficient extent, the perforator is to be withdrawn in the same cautious manner with which it was introduced. The brain should be thoroughly broken down, either by the finger or by the introduc-

tion of any convenient instrument for that purpose.*

The next part of the operation consists in extracting the head by means of the craniotomy forceps, a pair of which were invented some time ago by Dr. Davis. These are, however, quite inadequate in the severer cases of this kind, and will ere long be completely superseded by those of Mr. Holmes; the invention of which entitles this gentleman to the thanks of every obstetric operator. His (Mr. Holmes's) instrument is one of much greater power, and may be used with more certainty than that of Dr. Davis, which, from the arrangement and small size of the teeth, is very apt to slip, in consequence of the scalp alone being transfixed by them. With Mr. H.'s, this accident cannot take place: the vast superiority of which instrument has, indeed, been

* The handle of a common spoon answers very well, or a single blade of Dr. Davis's craniotomy forceps.

acknowledged by all who have used it ; more, therefore, need not be said in its favor.

A secure hold of the head having been obtained by the instrument, the convex blade of which is passed on the inside of the cranium through the opening made by the perforator, and the concave on the outside, the operator gradually draws down ; making use at first of a moderate degree of force only, and gradually increasing it till the head has passed through the contracted brim ; after which there is usually but little difficulty. The long diameters of the pelvis, and of the head and shoulders of the child, must be borne in mind, that, in the progress of the delivery, they may be made to correspond with each other.

When the child is born, a suture is to be passed through the torn edges of the scalp, in order that it may be brought together, the cranial bones having been previously pressed as nearly as possible into their usual form.

4. COMPLICATED LABOUR.

A labour is called complicated when it is accompanied by certain symptoms or diseases, not necessarily connected with the parturient functions.

LABOUR WITH HEMORRHAGE FROM THE UTERUS.

Every labour is accompanied with a certain quantity of bloody discharge from the womb. but the hemorrhage sometimes bursts forth in such fearful quantities, that the patient's life is suddenly placed in the most extreme peril. In order thoroughly to understand the cause and the treatment of uterine hemorrhage, it is necessary to bear in mind the connexion which is established between the fœtus and the mother by means of the placenta, and the

peculiar manner in which the circulation through the maternal portion is carried on.

The human placenta is formed of two separate portions; the one the production of the fœtus, which is vascular, the other the product of the uterus, which is cellular; and hence it is divided into the fœtal or vascular, and the maternal or cellular portions. Between these two parts there is no direct communication, the circulation through each being perfectly distinct. In the arrangement of the fœtal blood-vessels, there is nothing peculiar; the arteries terminate in the veins, as in other parts of the body: but, if the maternal structure be examined, it will be found to be widely different; for here the arteries terminate by open mouths into the cells, from whence, also by open orifices, the veins arise; the communication between artery and vein being kept up by the intervention of this cell. The blood brought by the uterine artery (for, in order to make the subject more clear,

a single vessel will be selected,) must be deposited in this cell before it can be taken up by the returning vein: if, then, by any accident, the cell be torn away from the sides of the womb, (and this must always take place in a separation of the placenta,) it must necessarily have the effect of destroying the communication between artery and vein. The blood, therefore, brought to the uterus by the former vessel, cannot be returned by the latter, but is poured from the open mouth of the artery into the uterine cavity; and when the extraordinary size of these vessels at the full period of gestation be considered, and the free communication that exists between the cells of the placenta, it will not be at all surprising that the hemorrhage should be alarming, even where the separation has not occurred to any great extent. As the size of the blood-vessels increase in a ratio corresponding to the period of gestation, it follows that the nearer a female has approached her

full time, the greater will be the danger to be apprehended from uterine hemorrhage; although, even in the very early months, blood is frequently effused in alarming quantities, owing to the great number of vessels (although of small size) by which the ovum and the uterus are connected together.

Hemorrhage may occur at any period of the labour, before it has begun, or after it has been completed; and, although the general principles of treatment are the same, it will be found convenient to describe it under two heads.

I. HEMORRHAGE BEFORE THE BIRTH OF THE CHILD.

This may be either accidental or unavoidable;* it is said to be accidental when it arises from a casual separation of the placenta from the sides of the uterus; unavoidable, when it

* See Dr. Rigby's excellent practical work on Hemorrhage.

occurs in consequence of this organ (the placenta) being attached over or near to the os uteri.

Accidental hemorrhage, or that which occurs from a partial separation of the placenta, is not usually attended with so much danger as that which occurs from unavoidable causes, though the irruption of blood in these cases is sometimes so sudden and profuse that, unless proper measures be instantly had recourse to, the female's life may be sacrificed; but, if attended to early, and properly managed, the chances are greatly in favor both of the mother and the child. The two varieties of hemorrhage can only be distinguished by a careful examination per vaginam, when, if it be arising from accidental causes, the membranes will be felt presenting at the os uteri; the finger should then be carried round its whole circumference, in order to be certain that the placenta is not even partially attached

to it. Where the vagina and mouth of the womb are filled with coagula, a careless examiner might be rather puzzled in making his discrimination, especially before the parts were dilated; but the difference in the feeling communicated by the touch is so great, that an experienced finger cannot readily confound the smooth and easily lacerable surface of a clot of blood, with the firm, rough, unequal, and granular-like substance of the placenta. It not unfrequently happens that the irritation produced by this examination stimulates the uterus to contract, and the membranes will then be pushed down in a more decided manner: and this will greatly assist the diagnosis. It is to be observed, that the discharge is diminished, if not altogether arrested, during a pain.

Treatment. The treatment of this variety of hemorrhage is generally simple and easy: where it is slight, it sometimes happens that the mere vaginal examination, by increasing

the force of the uterine contractions, at once puts a stop to the flow of blood, and nothing more will then be required from the accoucheur. Where, however, the symptoms increase or continue, the membranes containing the liquor amnii are to be ruptured: by the escape of the waters, the uterus is allowed to contract more forcibly round the body of the child, which will necessarily diminish the caliber of the bleeding vessels. The uterus is often also stimulated to greater exertion; the pains increase, and the child is expelled without further danger. The application of napkins, soaked in vinegar and cold water, to the abdomen and vulva, is also frequently useful. If the bleeding continue after the evacuation of the liquor amnii, the only plan of proceeding is to empty the womb of its contents; and the manner in which this is to be done depends upon the situation of the child. If the head be floating loosely above the brim of the pelvis, the operation of turning may be had recourse

to. If it be engaged in the superior aperture, the long forceps, and if it has completely descended into the cavity, the short forceps, may be employed.

In cases of severe floodings, the *secale cornutum*, in the usual doses (twenty-five grains), should be exhibited; though this must by no means supersede the measures just recommended.

Unavoidable hemorrhage. The placenta is usually situated at or near the fundus uteri, and consequently is quite out of the way during labour; but it occasionally happens that it is attached to the lower part of the cervix uteri, completely closing, as it were, the orifice of the womb. Where this is the case, the opening of the mouth of the womb must, of necessity, have the effect of separating the placenta from its sides, detaching the cells into which the uterine arteries are opening, and thus inevitably giving rise to hemorrhage; and, in consequence of this detachment

taking place to a greater extent during the contractions of the uterus, the reason is at once seen why the flooding is increased under uterine action, (which is very different to what takes place in accidental hemorrhage.)

Sometimes the placenta is attached to a portion only of the os uteri, forming what has been termed a partial placenta presentation. On making an examination under such circumstances, the membranes may be felt protruding; but, by a careful introduction of the finger a little within the womb, and by gently passing it round the os uteri, it may often be distinguished readily enough. In placenta presentations, the blood generally escapes in alarming quantities; the pains are frequently accompanied with very frightful gushes; and, if aid be not promptly administered, in the majority of cases the patients would perish.

Treatment. Where the placenta is partially presenting, and the bleeding not very considerable, the mere rupture of the mem-

branes, by allowing the uterus to contract, has been by some said to be sufficient. The hemorrhage is, however, frequently very profuse, and therefore in these cases, as well as in those where the placenta is completely fixed over the mouth of the womb, the only safety to the mother consists in emptying the organ, and it is of high importance that this be done as early as possible, before the patient is exhausted by the loss of blood. It is therefore considered a fixed principle to extract the child by the operation of turning, the very instant the soft parts are found to be in a state which will allow the hand to be introduced without risk of injury; and, in cases of severe hemorrhage, relaxation and dilatability is soon produced. Under those circumstances no man of prudence would think of waiting for uterine action: first, because he knows that, the longer the hemorrhage continues, the less chance would there be of the pains returning; and secondly, because, if these contractions

should come on, it would be disadvantageous, inasmuch as they would obstruct the hand when introduced for the purpose of turning the child; and, by the opening of the os uteri, (the natural effect of these pains,) the placenta attached to its circumference must be still further separated, and an increased flow of blood be the unavoidable result.

Where it is a partial presentation of the placenta, the hand should be introduced by the side of it, the membranes ruptured, and the feet grasped and brought down; but, where the presentation is complete, it is better to pass the hand through its substance; a method of proceeding certainly more hazardous to the child, in consequence of the fœtal vessels being thus broken down, but more safe to the mother, because the necessity for a still further separation of the placenta from the sides of the womb will thus be avoided.

When the delivery is so far advanced that the body of the child is passing the os uteri,

in consequence of the pressure which is exerted upon the uterine vessels, the bleeding is considerably lessened, and therefore it may be right at this period to wait a short time; and, if there were still a want of pains, to exhibit a dose of the *secale cornutum*, to employ brisk friction over the uterine region, and, in cases of great exhaustion, to give the patient a tablespoonful of undiluted brandy.

After the birth of the child the placenta generally soon follows: if any difficulty arise, it may, from its situation, speedily be removed.

II. HEMORRHAGE AFTER THE BIRTH OF THE CHILD

May occur either before or after the expulsion of the placenta.

Hemorrhage with retained placenta. When the management of the placenta was treated of, the causes which gave rise to its detention

were enumerated. Where the case is combined with uterine hemorrhage, it arises in consequence of the placenta being wholly or in part separated.

Treatment. The general principles of treatment are the same as in retained placenta without hemorrhage; but, as the danger is here greatly increased, they must be more vigorously brought into action. It should be carefully remembered that the existence of the placenta in utero is not the cause of the hemorrhage, but a joint effect with it of some unfavorable condition of the womb: this, therefore, ought to be first inquired into, and the remedies employed accordingly. If the whole of the fibres of the womb were made to contract, the uterine vessels would be closed, and the bleeding, as a matter of course, would cease: to accomplish this object, therefore, is the first indication. Friction, and the liberal affusion of cold water upon the abdomen, are the two most powerful agents for effecting

this purpose; the *secale cornutum* may also be administered; and, as a last resource, the hand is to be introduced into the uterus, and the placenta separated. This latter mode of proceeding, however, is seldom required, excepting in cases where there is preternatural adhesion of it to the uterine surface, or where there is an irregular and spasmodic action of the womb. (See *Retained Placenta*.)

Hemorrhage after the birth of the placenta is by no means an uncommon occurrence. It arises from the same cause as hemorrhage under other circumstances, viz. from a want of contractile power in the uterus; and, in consequence of the whole placental surface being at this time exposed, the flow of blood is often very alarming.

The *treatment* is not different from the former variety. Application of cold and friction is to be vigorously employed; and considerable advantage is often derived from grasping the

fundus uteri through the abdominal parietes, and making strong pressure upon it, so as to double it upon itself.

Internal hemorrhage. It occasionally happens that, although the blood is issuing from the extremities of the uterine arteries, yet it remains concealed from view, in consequence of its being detained in the cavity of the womb. When the womb is examined externally, it will be found to be soft and gradually enlarging; the patient will be faint, and, in fact, will be labouring under all the symptoms which are attendant on uterine hemorrhage occurring under other circumstances.

The *treatment* is precisely similar to the former. By some it has been recommended that the hand be immediately passed into the uterus, and the clots removed from its cavity; but in general this is wholly unnecessary, and indeed it is doubtful whether there would not be danger of increasing the hemorrhage by re-

moving the coagula which might be adhering to the orifices of the vessels.

General observations on hemorrhage. From the immense quantity of blood which is pouring from the vessels in uterine hemorrhage at the full period of gestation, the danger will be at once acknowledged, and the necessity for promptitude of action be fully established: hence the propriety of paying vigilant attention to patients who shew the least tendency to this unfortunate event. In addition to the measures which have been recommended in detail, it is of consequence that nourishment be from time to time administered, and occasionally that some stimulus be employed. It is, however, a common error to use these remedies (stimulants) too early: the patient becomes faint, the attendants are alarmed, and a quantity of ardent spirit is instantly given her. But the prudent practitioner will bear in mind, provided the discharge has not

been in an alarming quantity, that syncope is beneficial; for not only is the circulation greatly lowered during this state, but it is a well known fact that the blood has a greater disposition to coagulate,* and may, consequently, by the formation of a clot, oppose a temporary barrier to its further irruption.

If, however, the hemorrhage continue, and the syncope become repeated, it is of the utmost importance to endeavour to prevent its recurrence, by occasionally administering a tablespoonful of brandy, or some warm milk to which spirit. ammon. aromat. ζi . has been added; taking care that it be given in small quantities, and frequently repeated. The stomach of these patients is, however, often so irritable that it will reject every thing, and therefore any attempt to administer food or medicine is productive of uneasiness and distress.

* The author has repeatedly witnessed this effect in experimenting upon the blood of the horse.

Occasionally, in the more severe cases of this kind, even although the stomach does for a time retain nourishment, a sensation of weight and oppression is felt at the scrobiculus cordis, and the patient is manifestly relieved when it is rejected by vomiting. The dangerous symptoms may, however, continue or increase, the pulse becoming nearly or quite imperceptible at the wrist; the most powerful stimulants fail in producing more than a temporary rally; the patient's face becomes "hippocratic;" the extremities first, and afterwards the body generally, getting cold; the respiration deep and laboured; there is an incessant and uncontrollable desire to change posture; frequently a general convulsive attack, and then death closes the scene. In many instances this appalling state of things does not come on without warning: hour after hour is the unfortunate victim gradually, though certainly (under the ordinary modes of treatment), sinking into the grave;

and this event may take place after the hemorrhage has been completely arrested by the thorough contraction of the uterus; the system having received so great a shock from the loss of blood that it cannot rally. When this result is apprehended, from the symptoms just enumerated, and from the failure of stimulants to excite more than a temporary rally, (for it will generally be found, even in these desperate cases, that the pulse will rise for a time after the stimulus has been given, but will soon sink again,) the accoucheur will be guilty of a gross dereliction of his duty, if he neglect to have recourse to—

THE OPERATION OF TRANSFUSION.

So simple is the principle, so easy the performance, and so splendid have been the results of this operation, that it has borne down the clamour of its opponents, and may now fairly be said to be fixed upon as firm a basis as most other operations in surgery. The design of this work being to convey practical information, it is not intended to enter into any lengthened historical detail. As, however, the trials which were formerly made have been brought forward in evidence against transfusion, it will be but right to state that, as at present practised, it differs very materially both in principle and mode of performance.

It was formerly recommended in certain

diseased states of the constitution, and the blood was taken from the inferior animals, (the calf, sheep, &c.) It is now used as a remedy in desperate cases of hemorrhage; human, and not brute, blood being employed. This difference, though a very important one, was entirely overlooked by the objectors to the operation. Again, it has been asserted by some that transfusion is wholly unnecessary, because, if the flow of blood were arrested, the patient would invariably recover without it; and, if the hemorrhage continued, that it would be useless, as the blood injected into the arm would immediately pass out again at the uterine artery. Many well-authenticated cases, however, have shown that the first assertion is incorrect;* and, with regard to the second, it remains to be proved whether, un-

* One melancholy example of this kind came under the author's own observation; the poor woman living three hours after the hemorrhage ceased. This case led him to think seriously of transfusion.

der the circumstances of the case, the introduction of fresh, pure, and living blood, would not, by acting as a stimulus to the system, induce such a state of contraction in the muscular structure of the womb as would prevent any further effusion. This is thrown out as a mere conjecture, as it has not yet been employed with this intent, and consequently is unsupported by facts; but, upon reflection, it seems probable that such would be the effect: at any rate, the attempt would be perfectly justifiable in a case otherwise hopeless; and it should be particularly borne in mind that under no other circumstance has this operation been hitherto performed.

For the suggestion of transfusion of blood as a remedy in these desperate cases of hemorrhage, the profession and the public at large are under deep and lasting obligations to Dr. James Blundell; and, although the proposal was treated with "neglect, opposition, and ridicule," still he was not to be

deterred from his purpose till the remedy had experienced a fair trial; being convinced, from his numerous and well-conducted experiments upon the dog, that in this animal, at any rate, the injection of canine blood into the veins was not only practicable and safe, so far as the operation was concerned, but that it really was applied to the nourishment of the system, and consequently was something more than a mere stimulus to the heart's action. This fact being established with regard to the dog, it required no great stretch of the imagination to suppose that human blood, injected into human veins, might also be made subservient to the purposes of human circulation; and upon this principle, and grounded upon these facts, a trial of it was recommended.

From its novelty, however, some time elapsed before it was put into practice; and it is productive of great satisfaction to the author when he reflects that the first successful operation of transfusion was performed

on one of his patients by Dr. Blundell and himself. The female was an exceedingly delicate, weakly creature, who had lost a large quantity of blood very suddenly after parturition, and in whom the most powerful stimulants failed to procure more than temporary benefit.*

Dr. Blundell, Mr. Doubleday, and others, have in several instances successfully employed transfusion, and, with the exception of one case out of about fourteen,† (where the operation has been properly and carefully performed,) there has been no recorded instance of failure. When it is considered that the cases were otherwise desperate, and that perhaps the mechanical means (from its being a

* This took place in August 1825. For a detailed account of the case, see the medical journals of that period. The author has twice performed the operation since that time, and with the most perfect success.

† The *precise* number has escaped the author's memory.

new remedy) were defective, its value must be highly esteemed; and it may, perhaps, be reckoned among the greatest improvements, or at any rate the most valuable addition, which has of late years been made to the means of the accoucheur, and one which is in itself sufficient to hand down the name of its projector to posterity, as one of the greatest benefactors to *womankind*. Nor is it likely (the safety and utility of the operation being fully established,) that its beneficial effects will be confined to the female sex, as it is equally applicable to the male when sinking from large losses of blood, whether from accident or any other cause.

Method of performing the operation. The transfusion of blood from one person into the veins of another may be effected in various ways. The syringe has hitherto been employed, and, as it is very conveniently and safely performed by means of this instrument,

the reader's attention will not be distracted by the relation of any other method. An improvement to the common syringe has been made by Mr. Lloyd, an ingenious instrument-maker, residing in King street, Borough: to the barrel of this is appended a small funnel, by means of which contrivance the blood passes directly from the arm of the person supplying it into the syringe, without being obliged to be first received into another vessel: some little time is thus gained, which is an object of importance. A stopcock is also attached to it, by turning which the communication may be opened either with the funnel or with the extremity of the instrument, according as the blood is either being received into the syringe from the funnel above, or is being passed into the vein of the patient. The instrument is made of brass, and well lined with tin; and it is scarcely necessary to add, should be perfectly cleaned before it is used, and slightly warmed by passing tepid water several times

through it, taking care not to use it too hot, as it would have a tendency to coagulate the serum of the blood.

The basilic or the cephalic vein of the patient is to be laid bare to the extent of an inch or an inch and a half, taking care to divest it of its surrounding cellular membrane. A blunt-pointed bent probe, or a curved and blunt needle, is then to be passed under its lower extremity, in order that pressure may, if necessary, be made upon it with the finger, and the blood be prevented from oozing out; which, by obscuring the orifice, would be productive of difficulty and delay. An opening should be made into the vein large enough easily to admit the point of the tubule which is attached to the extremity of the syringe. This instrument is made to contain two ounces only, it appearing from previous experiments to be safer to inject a small quantity at a time.

These preparatory steps having been taken, a very free incision is to be made into the

arm of the person about to furnish the blood, so that it may pass in a full stream into the funnel, and be from thence absorbed into the syringe; the stopcock must then be turned, and the funnel removed. The next part of the operation consists in expelling any quantity of air that may be contained within the instrument: for this purpose it is to be placed vertically, the handle below, the point upwards; the piston being gradually pressed upwards, till about a teaspoonful of blood is expelled. The point of the finger being then placed over the nozzle, the horizontal direction is to be given to the instrument, which should be insinuated about half an inch within the vein, in the direction, of course, towards the heart, and the blood *very slowly* and cautiously injected. This is a point of great importance to be observed; for the heart's action is in these instances so weak, that a sudden influx of blood would, in all probability, at once overwhelm it, a fact witnessed by the author

in the experiments upon the horse before alluded to. On removing the syringe from the vein, it should be instantly well washed out with cold water. Before repeating the injection, it is better to wait for the space of four or five minutes, to allow the blood time to circulate over the body; it may then be repeated in the same manner, the patient being narrowly watched with regard to the effect it has produced upon her.

Eight, ten, or twelve ounces of blood may be thus injected; and it will seldom, if ever, be found necessary to exceed this latter quantity, even where the hemorrhage has been very profuse. The intention of the operation is not to restore the blood-vessels to the same degree of fulness as previously existed, but so far to add to the power of the system that the heart may be enabled to continue its contractions. It should be remembered that this organ (the heart) having been for some time acting on a greatly diminished supply of blood, is well

prepared to receive the stimulus which an additional quantity would afford it, although small in comparison to that which has been lost. This circumstance is proved by the fact that the pulse evidently improves, sometimes after the first, but always after the second injection; and the effect is in general permanent, there being no recurrence of the syncope afterwards, which affords pretty satisfactory evidence that the injected blood does not act as a mere stimulus, but that it gives *power* to the system.

When a sufficient quantity of blood has been introduced, the probe or needle is to be removed from the arm, the edges of the wound brought together by means of adhesive plaster, and over this a bandage loosely applied: in fact, it should be treated as a common incised wound.

After-treatment of hemorrhage. In patients who have suffered from severe hemorrhage, care is required in order to keep them perfectly quiet. There is a great degree of restlessness and desire to change posture induced by the loss of blood, and it is of the utmost importance that their entreaties to be moved should not be complied with; for the circulation is in such an enfeebled state, that the agitation produced by motion would actually endanger life. With the intention of procuring rest, opium may be employed in the form of pills; two grains being first given, which is to be repeated in the course of an hour, if needful; or, if the stomach be not irritable, from forty to eighty minims of the tincture may be used in its stead. It will often, however, be found in these cases that the remedy fails in procuring sleep.

Another great point to be attended to is the supply of proper nourishment. Great atten-

tion is necessary in this respect, from the well-known fact that the powers of digestion in these patients is exceedingly weakened: the mucous membrane of the bowels is particularly prone to take on diseased action, under which the patient occasionally sinks. Those articles of food should therefore be selected which are the least likely to produce this effect. There is, perhaps, nothing better for the first twenty-fours than milk, or beef-tea, which is to be given in small quantities and frequently repeated, that the stomach be not at any time rendered uneasy by distention. Light puddings may afterwards be allowed; and, as soon as the stomach can bear it, a small portion of animal food, such as a lean mutton chop. Fermented liquors must be avoided; but, if the patient feel particularly exhausted and faint, a tablespoonful of brandy diluted with water may be given an hour after her dinner.

Where the bowels are constipated, a laxa-

tive must be given occasionally, and for this purpose the very mildest should be selected,* as an active purgative would greatly tend to bring on that irritable state of the intestinal canal which is so much to be dreaded.

Pain in the head, sometimes of a very intense character, is frequently one of the sequelæ of uterine hemorrhage. This symptom often remains till the patient's strength returns, and appears to be entirely depending upon the loss of blood, in some cases being the direct effect of it, in others in consequence of the reaction which follows. Where it is attended with heat of scalp, great relief is experienced from the diligent use of an eva-

* The following draught will be found very useful in these cases :

R. Pulv. Rhei, gr. x.

Potas. Sulphat. ʒss.

Aq. Ment. pip. ʒx.

M. et fiat haust. pro re natâ sumend., et post horas quatuor si opus sit repetend.

porating lotion,* which appears to exert a very soothing influence, independently of its gratefully cooling effect. Palpitations of the heart, and other symptoms usually designated under the term "hysterical," are not uncommon, and generally subside or are relieved as the strength returns. Does excessive uterine hemorrhage ever lay the foundation of organic disease of the heart? A long course of tonic remedies, combined with an appropriate regimen, is frequently required in these cases, before the patient's health is re-established. Removal into a different and, if practicable, a more pure air, will be advantageous. Small doses of *conf. opii*, combined with *conf. aromatic*, are serviceable in soothing the bowels when irritable, though this is frequently an exceedingly troublesome complaint to manage. Perhaps it may hereafter be found that the transfusion of a small quantity of blood would not be unattended with advantage.

* *R. Sp. Eth. Sulph. ; Aq. dist. āā partes æq. M. fiat lotio.*

Labours with hemorrhage from other organs.

The process of parturition is always accompanied with a hurried state of the circulation; and it occasionally happens that, under this increased excitement, some one or more blood-vessels give way, and blood is effused in considerable quantities. It may take place from the lungs, from the stomach, or from the nose, &c.

Treatment. These complications of labour are to be treated upon general principles; the constitution of the patient must be carefully examined into, and, if the vascular activity be accompanied with a corresponding degree of power, (and this will be marked by a strong pulse, white tongue, thirst, and other febrile indications,) great benefit will be derived from the abstraction of blood. The bowels are afterwards to be cleared by means of a large emollient enema; and those medicines which have a tendency to depress action exhibited, such as the nitrate of potash, in doses

of twenty-five grains every two hours. The stomach will bear the remedy better if it be given largely diluted. It will sometimes produce nausea, and under this state the pulse sensibly softens. The patient is to be kept in a perfect state of rest, and her thirst alleviated by cold subacid drinks.

When hemorrhage occurs in an opposite state of system, where there is great weakness and irritability, the plan of treatment must be altered. After having cleared the bowels, as in the preceding instance, great benefit will be derived from the following draught:

R. Acid. Sulph. dil. m. xv.

Syr. Rhoeados ℥i.

Tinct. Digitalis m. x.

Aquæ ℥ xi.

Fiat haust. tertiis horis sumendus.

This combination of the acid with digitalis has a remarkably good effect when exhibited in cases where there is great action with little

power;* the digitalis lessening action, whilst the acid appears to guard it against too great a depression of power. If the irritability be very great, tinct. opii m. x. may be added to each draught. The state of the uterus must not be lost sight of; and if, upon a careful examination, it should appear that the continuance of the parturient process has a decided tendency to aggravate the symptoms, it will be right (the state of the parts permitting) to finish the delivery either by turning or the application of the forceps, according to the situation of the child. The ultimate recovery of these patients is frequently protracted; in which case they require the same plan of after-treatment recommended in uterine hemorrhage.

* The author has used it very satisfactorily in acute pain of the side occurring in delicate young women, whose pulse has been rapid, though feeble.

Labour with rupture of the uterus or vagina.

This very dreadful accident may take place at any period of the labour, and appears to be produced either from increase of the powers of resistance on the one hand, or from some unfavorable condition of the muscular structure of the uterus on the other; it has also been in some instances occasioned by forcible attempts to turn the child in utero, during the continuance of the pains. The symptoms characterising the accident are, a tearing sensation on the part of the patient, sufficiently obvious to convince her that some internal part has been lacerated; the head (if it be a natural presentation) recedes; there is a cessation of pain, a discharge of blood from the vagina, and generally a sudden and frightful prostration of strength. If the hand be placed upon the abdomen, the limbs of the child may be felt through its parietes. The patient becomes attacked with alarming syncope, her extremities are cold, and she

vomits a large quantity of dark-coloured grumous fluid.

Treatment. The delivery of the child must be effected as speedily as possible, either by the use of instruments or by the operation of turning, unless the contracted state of the uterus prevent this mode of proceeding; in which case an incision is to be made through the abdomen, and the child removed in that direction: a better chance would then be given to the infant, and the mother would scarcely be in a worse condition than she was before.

These cases usually prove fatal, and therefore it is advisable that a consultation be held upon them.

Where the laceration is confined to the vagina, the case is not so desperate, provided the delivery be promptly executed; though there will be even here great danger of inflammation, which, should it arise, must be treated upon general principles.

Labour with convulsions. These formidable attacks sometimes come on suddenly, without warning, but they are generally preceded by symptoms marking an extraordinary degree of excitement in the vessels of the brain, viz. giddiness and pain in the head, sometimes exceedingly acute, accompanied with a distressing feeling of constriction and fulness, as if the brain were too large for the cranium; noise in the ears, and indistinct vision, the patient appearing to see a number of bright metallic substances floating before her eyes, or at other times experiencing partial blindness. There is often a great disposition to sleep, not only in the intervals between, but even during the continuance of the pains; the pulse is usually laboured and slow, though at other times it is quick and somewhat sharp. If these symptoms are not relieved, the convulsive attack soon follows, the muscles of the body becoming violently agitated; the features are distorted, the lips livid, the eyes

have a wild appearance, the breathing hurried, and there is foaming at the mouth, in consequence of an increased flow of the saliva; the inspiration of air through which often produces a peculiar hissing noise; and by this peculiar symptom Dr. Denman asserts he has been generally able to detect the state of the patient, although he has not been in the same room. During the fit the patient cannot be roused; and, on its decline, she is generally left for some time in a state of stupor: according to the longer or shorter continuance of this state, and to the longer or shorter interval between the attacks, is the danger in some degree to be estimated.

Treatment. Blood is immediately to be taken from the arm or the temporal artery, or both, and no rule can be laid down as to quantity: it should be allowed to flow, unless relief be previously obtained, till at least twenty-four or thirty ounces have been abstracted. If the bowels are constipated, and

the rectum contain hardened fæces, a large enema is to be thrown up; the head to be kept elevated, and the scalp frequently wetted with an evaporating lotion, the greater part of the hair having been previously removed. The repetition of the bleeding is to be regulated by the strength of the patient, the effect produced, and the violence of the symptoms. In some instances Dr. Denman has seen considerable advantage derived from suddenly dashing cold water in the patient's face; and, as this is a very innocent remedy, it might as well be tried, although the Doctor acknowledges that it frequently disappointed him.

No manual interference, for the purpose of expediting the delivery, is necessary in the majority of instances, provided the measures just recommended be promptly adopted; but, if the disease continues, the state of the uterus is to be looked to, and where, from the dilated state of the os uteri and the re-

laxation of the external parts, the child can be extracted without injury to the mother, it is unquestionably the best practice at once to finish the labour.

Convulsions have been described by authors as occurring in opposite habits, viz. in the relaxed, irritable, and debilitated. Where this is the case however, the fit will generally be found to partake more of the nature of an hysterical than of an epileptic paroxysm, and perhaps may be regarded as one of the almost endless varieties of that proteiform disease. There is fluttering and palpitation of the heart, a sensation of constriction about the stomach and œsophagus, a bright and glistening appearance of the eyes, a florid state of the lips, and the pulse, though it may be hurried, does not appear to be labouring and oppressed. Attention should in these cases be paid to the bladder and rectum; after which the following medicine may be ordered:

R. Sp. Ammon. Foetid. m. xx.

Tinct. Opii m. x.

Mist. Camphoræ ℥iiss.

Fiat haustus omni horâ sumendus.

Should these means fail to procure relief, and the disease appear to gain ground, then the delivery of the child is to be effected; and, as in females of this habit of body there is great relaxation of parts, no difficulty will be experienced in completing the labour.

Labour with hernia of the bladder. In some instances, though they are by no means frequent, the bladder descends during parturition, forming a tumor at the anterior part of the vagina: if much distended with urine, it will be of considerable size, and must therefore encroach considerably upon the cavity of the pelvis. The female complains of constant pain in the region of the bladder, with a great inclination to pass her water, though she is

unable to do so ; or, perhaps, a small quantity only escapes, leaving a greater portion behind.

Treatment. The bladder should be thoroughly emptied by the introduction of the catheter, and a steady degree of pressure kept up afterwards, in order that it may be pushed above and beyond the head of the child. It must be retained in this situation during the continuance of a few pains; the head will then pass it, and prevent any further descent.

MANAGEMENT AFTER DELIVERY.

As soon as the placenta is expelled, the practitioner should introduce his finger into the vagina, to satisfy himself that no laceration has taken place, that the uterus is not inverted, and that no portion of the foetal membrane remains behind.

The wet napkin is then to be removed, and two dry ones applied, one to the vulva, the other spread out and placed under the patient's hips. If the bandage around the abdomen has become loose, it ought to be re-tightened; and, where there has been hemorrhage, additional pressure may be made upon the uterus, by placing a pad formed of folded linen underneath it. Some simple nourishment, as gruel or sago, in small quanti-

ties,* is to be given her; and she is then to be left at rest for at least three quarters of an hour; after which, the soiled linen may be removed, the dry clothes which had been previously pinned around her, drawn down, and she may, very gently and cautiously, be placed in the bed. The horizontal posture should all this time be preserved by the patient; she ought by no means to be allowed to sit up, much less to assist in arranging her dress, as hemorrhage would very probably be induced by this circumstance.

There is always a great degree of vascular excitement during parturition; the pulse becomes exceedingly hurried, and, from the strong disposition there exists in the female to febrile and inflammatory diseases afterwards, it becomes of some moment that the circulation should as soon as possible be restored to its

* If the female be very much exhausted by the parturient process, it will be right to add a tablespoonful brandy.

equilibrium. Opium, from its well-known tendency to procure sleep, most powerfully contributes to this effect; and hence the propriety of exhibiting a large dose as soon as the patient is in bed. From forty to sixty minims of the tincture may be considered an average quantity; and, in order to assist its operation, the light should be excluded from the chamber, and the most perfect stillness enjoined. When the remedy acts favorably, the patient awakens refreshed; the frequency of the pulse is also greatly diminished.

In order to relieve those painful and spasmodic actions of the uterus, which, from their occurring after delivery, have been called **AFTER-PAINS**, the opium may be continued, in smaller quantities, during the succeeding twenty-four hours, or still longer, if occasion require; and it will be found serviceable to use it in the following form:

Rx. Liq. Am. Acetat. ℥iij.

Tinct. Opii m. x.

Syr. Papav. ℥i.

Aq. Menthæ Pip. ℥i.

Sis haustus, quartis horis sumendus.

These pains are often exceedingly severe, and ought always to be put a stop to.* It is a remarkable fact that they seldom occur in a first labour, and therefore one anodyne draught in these cases is frequently all that is required.

* It has been asserted by some that these pains are quite natural, and are instituted for the purpose of expelling any coagula from the uterus, and ought not to be interfered with. This opinion, however, is not correct: for, in by far the most severe case of after-pains ever witnessed by the author, the uterus was contracted to its utmost extent, and no clots whatever were discharged. Again, it is found that no women do better than those whose after-pains have been stopped by opium. Now, this could hardly be expected to be the case if it were an unwise interference with a *natural*, and therefore a *necessary*, process.

Provided the patient's bowels have been in a regular state previous to her delivery, it is better to defer giving an aperient till the third day; for it is highly necessary that the parts of generation should be kept in a state of quietude after the exertion they have undergone, and, from their contiguity to the bowel, it is impossible to act upon the one without in some degree disturbing the other. Half an ounce of castor oil generally answers the purpose, as well or better than any other medicine; and this dose may be repeated at the expiration of four or six hours, if the bowels have not been previously relieved. Where the oil does not sit easily on the stomach, any other simple and mild laxative is to be substituted for it. The purgative must be repeated as occasion requires, and this is often all the medical treatment that is necessary.

The diet of puerperal patients ought, for the first three days, to consist chiefly of gruel, tea and toast, &c.; nothing stimulating is to be

allowed, for fear of inducing fever or inflammation. The old brown caudle is now very properly gone out of fashion. On the fourth or fifth day, if every thing be doing well, slight solid nourishment may be allowed, such as boiled chicken, rabbit, or, if it be preferred, a nutritious pudding. In the course of a few days longer, the female may return to her common diet.

It is a popular opinion, and one which appears to be founded in fact, that ale or port has a great tendency to encourage the secretion of milk. This beverage, however, should be interdicted till after the fourth day, and for a still longer period if there be any febrile tendency.

It is a common error among nurses to allow their mistresses to sit up too early after confinement, which frequently lays the foundation for prolapsus uteri, and other unpleasant symptoms. No female, however natural and easy her labour has been, ought to be allowed

to rise from the recumbent position before the expiration of a week: this is not giving at all too much time for the parts of generation to recover their tone. After this period she may sit up to her meals, but should recline on a sofa during the rest of the day; and this plan is to be adopted till the end of the second week, and even much longer should circumstances appear to demand it.

The temperature of a lying-in room should not be too high. Females frequently suffer from this circumstance: in some it induces a state of fever; in others, a distressing and weakening degree of perspiration. The room ought always to be moderately cool, and no more bedclothes allowed than is comfortable to the patient's feelings. In regulating these things, the season of the year is, of course, to be taken into the account; but it often happens that recovery is retarded in consequence of there being too much fire in the room, and too many clothes on the bed. Nurses have a

great horror of exposing their patients to a cold atmosphere, and frequently err in the opposite extreme.

If the mother intends to suckle her infant, it is a point of some importance that be placed early to the breast. Where this has been delayed, it sometimes happens that serious inflammation is set up, and great suffering is experienced. In order to prevent such an occurrence, the child should be put to the nipple as soon as the female has recovered from the exertion of her labour, even though there be but little secretion of milk. It is well known that the application of the child has a tendency "to bring in the draught," as nurses term it ; which is, in fact, a rush of blood into the gland for the purpose of secretion. When, from the flattened state of the nipples, the infant experiences much difficulty in getting hold of them, it will be necessary to draw them out by means of the nipple pump, and to replace the child immediately.

before they are again retracted. This frequently requires much patience and perseverance, and irritable women, with their first children, sometimes get so much fatigued and annoyed, that they feel inclined to give up the attempt altogether: it is, however, the duty of the medical man strongly to encourage them to proceed; for, independently of the milk being the proper nourishment of the infant, without which it is not likely to thrive, there is yet another reason why he should urge her to persevere, namely, the fact that, as a general rule, women do not conceive during the period of lactation, and are therefore saved the debilitating effects which would be produced by their becoming pregnant every eleven or twelve months, which would probably be the case if their children were not brought up by the breast.

It is proper also that, for the first four or five months, provided the mother be hearty and the secretion sufficient, that the child

should have no other food given it; the irritable state of bowels so frequently met with in children being often produced by improper diet.

It is customary to give an infant, as soon as it is born, a little aperient medicine, with a view of clearing out the meconium which has collected in its bowels during the latter periods of gestation. A small quantity of *ol. ricini* may be made use of. Amongst the lower classes, it is usual for the nurse to mix some butter and sugar together, which appears to answer the purpose equally well; though, perhaps, the actual necessity for either may be fairly questioned.

LOCHIA.

For some days after delivery, there is an exudation from the orifices of the uterine blood-vessels, which is called the *Lochia*, *Lochial Discharge*, or popularly "the Cleansings."

After a short time the colouring matter is retained, and a greenish yellow fluid comes away; and this, from its colour, is by females called the "Green Waters." The quantity of this effusion, and the time which it occupies, varies greatly: in some it is quite suppressed in the course of a week; in others it will continue during the month, and in some instances for a still longer period, especially where the female is of a relaxed habit. It occasionally happens that the red discharge will re-appear after it has subsided for several days: this effect is frequently caused by agitation of mind. Where it is very profuse, it must be treated as a case of uterine hemorrhage, viz. by the application of cold, strict confinement to the recumbent posture, and by the exhibition of the *secale cornutum*, in doses of twenty-five grains three times a day. The bowels should also be carefully attended to; a constipated state of them having a great tendency to aggravate the complaint.

MILK FEVER.

On the third day after delivery, it is common for females to complain of pain in the head and a generally febrile state of system, frequently preceded by a chilly fit; the pulse is full and quick, the tongue dry, and the skin hot; the breasts become swelled and painful, particularly where the application of the child to them has been neglected.

Treatment. The symptoms in some cases are so slight, that the aperient medicine previously recommended to be given on the third morning will be all that is required. Where, however, the fever still continues, small but repeated doses of saline purgatives are to be employed; and, where there is much distention of the breasts, the child is to be frequently applied to them, and the mother recommended to abstain as much as possible from fluids.

OCCASIONAL CONSEQUENCES OF PARTURITION.

SYNCOPE.

Some women, after delivery, are the subjects of repeated attacks of syncope, without any obvious external cause; partly, perhaps, in consequence of the pressure of the gravid uterus being suddenly taken off the larger blood-vessels, and hence an additional reason why the bandage so often recommended should be attended to.

Treatment. This affection generally takes place in hysterical habits, and is more alarming than dangerous. The accoucheur should in the first place satisfy himself that the fainting does not arise from hemorrhage, either

external or internal: this is done by examining the uterus through the abdominal coverings; and, if he finds it hard and contracted into a small compass, he knows that the uterine vessels must be closed. The position of the patient is next to be attended to: she ought to be placed with her head below the level of her body, in order that the blood may gravitate towards it, (syncope being supposed to arise from a deficiency in the quantity of blood circulating through the brain.) As soon as she can swallow, the following draught may be given:

Rk. Sp. Am. Foetid. ℥ss.

Mist. Camphoræ ℥iss.

Fiat haustus statim sumendus et repetend; si opus sit.

If there be much irritability and restlessness after the fit of syncope, ten minims of tinct. opii are to be added to the draught. Where there is organic disease of the heart, these attacks are exceedingly dangerous.

LACERATION OF THE PERINEUM.

In spite of the best directed efforts to prevent this accident, it occasionally happens that the perineum gives way. Carelessness is, without doubt, sometimes the cause, or an undue degree of violence in delivering with the forceps; but now and then it appears to be the effect of a delicate state of skin, in consequence of which it cannot support the necessary degree of extension during the passage of the head. The laceration in these cases seldom extends the whole length of the perineum, and therefore but little inconvenience is experienced.

Treatment. The slighter degrees of this accident do not require much medical treatment. Should the patient complain of smarting and soreness, a strong decoction of poppies is to be made use of, and the part smeared over with any simple ointment, to guard it against the irritating effects of the discharges.

Where there is complete laceration from the vulva into the rectum, the patient's situation is rendered most deplorable, as it but seldom happens that reunion can be effected, and therefore she will ever afterwards be subject to an involuntary discharge of fæces. In addition to the measures recommended, the patient must be desired to lie with her knees closely approximated; the bowels kept soluble, and a fresh and warm poultice applied every four hours. Stimulating lotions, rendered glutinous by the addition of gum acacia, may afterwards be tried; but where the rectum is involved in the injury, these measures seldom succeed. If the bowel remain whole, although the sphincter ani be divided, a perfect recovery is not improbable.

PROLAPSUS OF THE WOMB.

When a female has been allowed to sit up too early after confinement, this accident is by no means an unfrequent occurrence; and

if, from its having taken place in a previous labour, there is reason to suppose it will again occur, and the case be properly managed, it may in many instances be altogether prevented. When the increased weight of the uterus, and the lengthened state of its ligaments during and for some time after parturition, is considered, together with the great relaxation which takes place in the vagina, the reason why prolapsus uteri should occur at this period will be sufficiently obvious.

Treatment. The recumbent posture must be maintained for more than an ordinary period after confinement. The patient ought not to rise from this position for several weeks. As, however, the heat of a bed will have a relaxing effect, it is proper that she be removed to a sofa as soon as she can bear it. A nourishing diet is to be allowed, and particular attention paid in keeping the bowels soluble, as the exertion necessary to evacuate them when constipated is very injurious.

INVERSION OF THE WOMB.

The uterus is sometimes found, after delivery, to be completely inverted; its fundus passing through the os uteri, and lying out between the patient's thighs. This accident may be produced by forcibly pulling at the funis for the purpose of removing the placenta before the uterus is contracted, or it may arise spontaneously, from irregular contraction of the organ.

Treatment. From whatever cause it has originated, its instant reduction must be effected: if there be much delay, powerful uterine contraction is apt to come on, and the inversion is rendered permanent. The fundus uteri should be grasped by the hand, so as to double it upon itself, and steady pressure made upon it, passing it through the encircling os uteri, and carrying the hand far enough to return it completely to its natural situation. The hand ought to be

kept within the uterine cavity until regular contractions come on, by which a recurrence of the accident will be prevented. Where the placenta is attached to the uterus, it is better not to remove it until the reduction has been effected.

RETENTION OF URINE.

In consequence of the pressure to which the bladder is exposed during labour, its muscular structure occasionally becomes for a time paralysed, so that the patient is unable to pass her urine; and very considerable inconvenience will be the consequence of neglect of this circumstance.

Treatment. The catheter ought to be regularly employed twice at least every twenty-four hours; and if, after a few days, the symptoms are not relieved, small doses of the terebinthinate balsams will be found serviceable; and in very obstinate cases it may be necessary to apply a blister over the pubis.



INCONTINENCE OF URINE.

An injurious degree of pressure is sometimes experienced at the neck of the bladder on the muscular fibres around this part becoming paralysed, whilst the rest retain their tone. The consequence of which is, that, as soon as a small quantity of urine is secreted, the organ is stimulated, contraction takes place, and urine flows involuntarily.

Treatment. A small elastic gum catheter to the extremity of which a bladder has been previously fastened, should be introduced into the bladder, and retained there. The medical treatment is required as in retention of urine.

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PLATE I.

In this Plate, the child is represented in its natural situation, at the early period of labour. The head has not yet entered the brim of the pelvis. It is placed diagonally with regard to the pelvis, the forehead being opposed to the sacro-iliac synchondrosis, and the occiput to the acetabulum.

PLATE II.

In this plate the child is represented with its head engaged in the cavity of the pelvis; but little change has as yet been effected in its relative situation.

Plate 2.



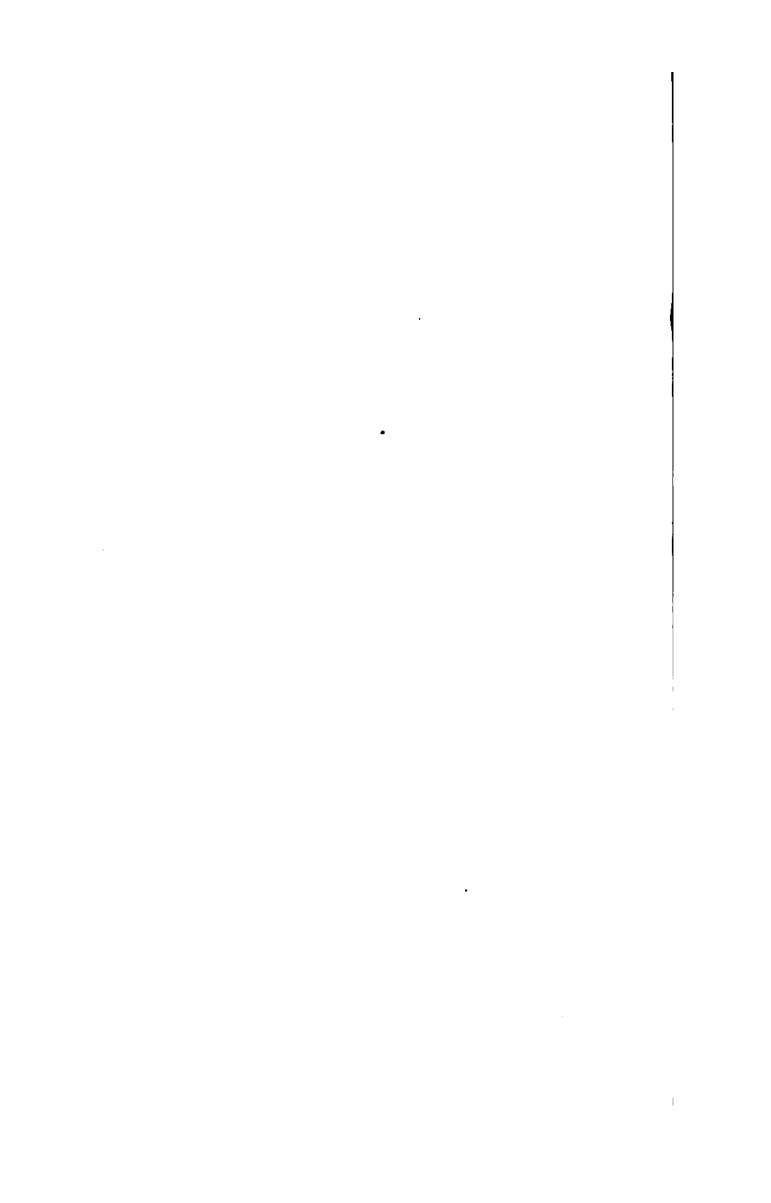




PLATE III.

In this plate the head of the child is represented in a very different situation to that which it previously occupied. (See Plate I. and II.) The half-turn has here been effected, the face being thrown into the concavity of the sacrum, whilst the occiput is seen passing under the arch of the pubis. The perineum is now beginning to be put upon the stretch.

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